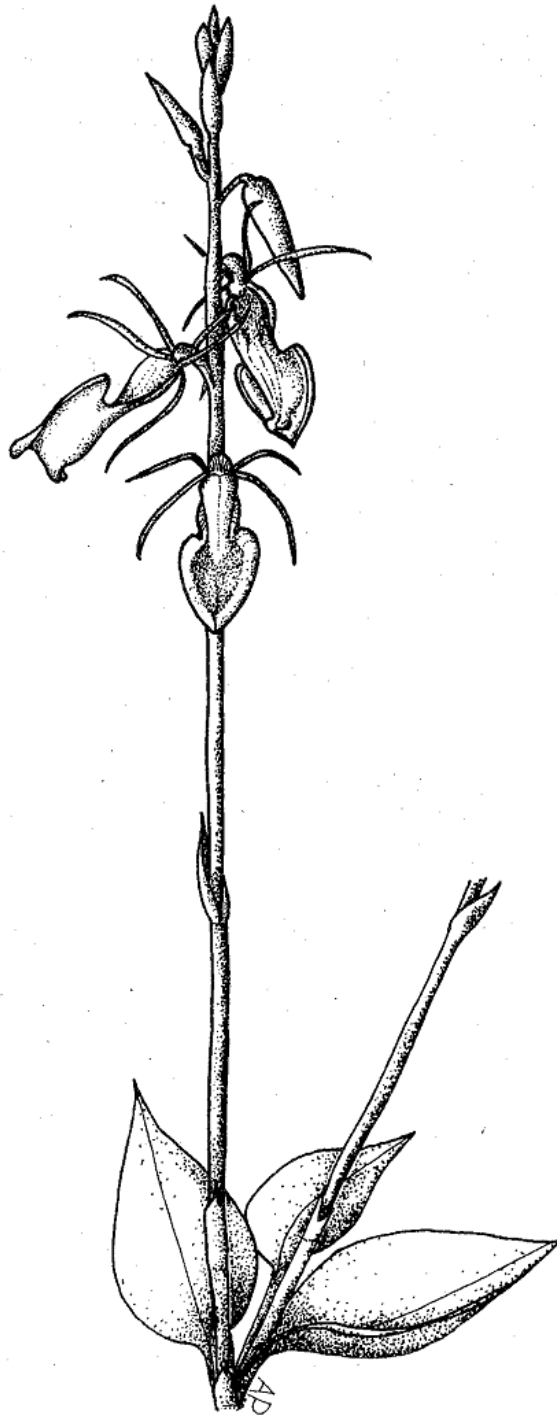


NATIVE ORCHID SOCIETY

of

SOUTH AUSTRALIA

JOURNAL



Cryptostylis ovata



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JOURNAL

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NEXT MEETING

When: Tuesday, 25 June, 8 00 p.m.

Where; St Matthews Hall, Bridge Street,
Kensington.

Subject: Mr M. Campbell will speak to us on Plant
Hunting in the Himalayas.

FIELD TRIP

PLEASE 22 June, 1985 at 1.00 p.m.
NOTE: Meet at Kersbrook: Nesbitt's Orchid
Nursery.
This We will be visiting Watts Gully and
trip Warren Conservation Park to look for :
is *Pterostylis robusta*, *P. alata* and
THIS *Acianthus* species, etc.
week
end Please bring a picnic lunch.

LAST MEETING - MAY

A revitalised trading table saw numerous established species and hybrid *Dendrobiums*, most with definite cool-growing potential, on sale. A large quantity sold quickly: more are expected for next month.

Our new Librarian, Mr Lawrie Chambers, assumed his duties.

Plant commentary was interesting and informative as usual with a number of clones of Hilda Poxon resulting in an interesting exchange regarding variation of flower markings in some clones from season to season. Most clones appear to be quite fixed while it appears that marking of some clones is variable.

The "main event" for the evening comprised a panel. The theme was "Orchid Cultivation - My Way". Topics covered included pot size; potting-on vs repotting; fertilisers and fertilising; where to obtain new clones of Hilda Poxon; how to separate mixed pots of terrestrial orchids; how to reduce population decline in cultivated *Glossodia major*; pros and cons of charcoal in composts and types of pesticides and reasons for their use. A quite considerable amount of audience participation was most informative and enhanced the session greatly.

ORCHIDS ON DISPLAY

Terrestrial
Pterostylis robusta
P. baptistii
P. x toveyana
P. species ?
P. grandiflora
P. obtusa
P. alata
P. vittata (green)
P. decurva
Acianthus exsertus (red)
A. exsertus (green)
Corybas unguiculatis
 Popular vote:

Pterostylis decurva grown
 by Les Nesbitt.

REMINDER

Subscriptions are now due.
 pay as soon as possible.

Single; \$6.00
 Family: \$8000

Epiphytes
Dendrobium Hilda Poxon x Blushing Star
D. Hilda Poxon
D. gouldii x dicuphum
D. bigibbum compactum x D. strobceras
D. torresae
D. bigibbum
Bulbophyllum macphersonii
Liparis reflexa

Popular vote:

Dendrobium Hilda Poxon grown
 by Les Burgess.

NEW MEMBERS

We welcome two new members to our Please club this month. They are:

Mr A. Chance
 Mrs J. Browne

On looking back I think that the main ingredients of this story were having the correct fungus, a source of seed (and for that I am indebted to Dr Kingsley Dixon), a modicum of patience, and some luck.

Rhizanthella gardneri is often called a "saprophytic orchid, but the term saprophytic is incorrectly used for a saprophyte is an organism that obtains its carbon compounds from dead organic matter and no higher plant is able to do this itself. All "saprophytic" orchids obtain most or all of their carbon compounds from their associated fungus, though some, such as *Dipodium punctatum*, which has some chlorophyll in the flowering scape, presumably are able to manufacture some of their own carbohydrates as do other green plants. So the question is really, where does the associated fungus obtain its carbohydrates from? Basically there are four possibilities: from soil or litter; from decomposing wood; from living plants either by being mycorrhizal with them; or by being a parasite on them.

Observation in Western Australia has always shown the underground orchid to be closely associated with *Melaleuca uncinata*; which means that the orchid's associated fungus is likely to be associated with that plant also. Microscopic examination of *M. uncinata* from the vicinity of an underground orchid showed that the fungus was not a parasite, did not occur in dead wood nor was it common in the litter of *M. uncinata*. These observations suggested the possibility that the fungus formed ectomycorrhizas in *M. uncinata*. Experiments showed that an isolate of the fungus from *Rhizanthella* did form ectomycorrhizas on *M. uncinata*, and stimulated growth of that plant in a sterilized soil low in available phosphate. Thus the fungus, as do other ectomycorrhizal fungi, helps *M. uncinata* by providing phosphate and probably other nutrients from the soil, but it also acts as a "carrier" of carbon compounds from the *Melaleuca* to the underground orchid.

The next step was to try to put these observations to the test by germinating seed and growing the orchid, This was where patience became necessary. Early experiments lasting some nine months showed that symbiotic germination of *Rhizanthella* seed on agar was inefficient (less than 1% germination) and the protocorms did not develop far. Experiments on germinating orchid seed in association with plants of *M. uncinata* ectomycorrhizal with the *Rhizanthella* fungus were started. Seedlings of *M. uncinata* were grown in a sterilized mixture of Kuitpo soil and coarse sand (1 : 9) in plastic bags in tins and watered to weight every second day. The ectomycorrhizal association is slow to establish taking 2.5-3 months. A month later seed of *Rhizanthella* was sown near the plants in filter paper folds to allow recovery of seed. After a further five months 4 filter papers were removed and examined. Only one had hyphae of the *Rhizanthella* fungus nearby and none had associated ectomycorrhizas! A plant of *M. uncinata* was washed free from the soil mix and it was found that ectomycorrhizas were few and sporadic in occurrence and were most abundant near the sides of the soil block. So the filter paper folds were replaced at the sides of the soil blocks near clusters of mycorrhizas. This also had the advantage that the folds (and seed) could be examined frequently without disturbing them by lifting the soil block in its plastic bag out of the tin. (The trouble with an underground orchid is that it is very difficult to examine when you wish.) Once placed near mycorrhizas *Rhizanthella* seed commenced to germinate in 2-9 months, became mycorrhizal, and developed into plants that flowered some 15-18 months later.

On Growing *Rhizanthella gardneri* (contd.)

To date eight plants have flowered. It is interesting that capitula have showed variation in size, shape and colour of bracts and in depth of occurrence of flowers below the soil surface (no litter is present). A plant left unpollinated (there are no insects in the growth room) did not set seed. Cross pollination by hand between flowers of a capitulum has given some seed and in the one case where cross pollination between plants was possible seed set was higher. Mature seed have been obtained 4-5 months after pollination and are being used to see if *Rhizanthella* can be grown in association with a host plant other than *M. uncinata*. The fungus will form ectomycorrhizas on eucalypts and other ectomycorrhizal plants.

Watering plants every second day for three plus years has been a tie (most watering done by myself) and one thing which has surprised me is how quickly *M. uncinata* succumbs to drought. In the sandy soil plants do not survive an extra 24 hours without watering. The first time I forgot to water a plant proved fortunate in that on washing out the orchid I found it had a young capitula, the first seen and something that I was not expecting at the time. On the second occasion, realizing that after all *Rhizanthella* is a fairly hardy plant, I grew another plant of *M. uncinata* in the container in place of the droughted one without apparent harm to the orchid. You may wonder why I persevered with watering to weight, but two plants I tried under ordinary glasshouse conditions both died for unknown reasons and that stopped work in that direction.

THE FIRST MAN-MADE ORCHID HYBRID

Despite the fact that nature has provided some 30,000 orchid species of great diversity and beauty man considered that there was still room for improvement. In 1852 an English surgeon named Harris conceived the idea that orchids might be cross-pollinated by hand and enlisted the help of his gardener friend Mr J. Dominy. Just four years later they flowered the first artificial orchid hybrid.

Today there are over 50,000 named hybrids and the rate of production of new ones is at an all time high!

CORRESPONDENCE

I have received some correspondence from Gawler Districts Orchid Club Inc. It is in regards to the Show Dates for 1985, published in the NOSSA Journal, April 1985, page 30. A mistake has been made, therefore please correct the dates for the Spring Show to read 30 September to 5 October.

Editor.

Correspondence (contd.)

9 Ashley Street,
BLACKALLS PARK. N.S.W. 2283

The Secretary

I would like to take this opportunity to thank the Committee and members of your Society for the hospitality that was shown to me during my recent stay in your State and also congratulate your members for the positive and practical way that you have found to (deal with) the problem of insuring the future of the native orchids through the tuber bank and the flasking program that is being carried out by your members. While we in the eastern states are not yet faced with these problems of native orchid survival that you have I feel that the blueprint that you are founding will no doubt be of great use some time in our foreseeable future.

While at your meeting and at other times during my stay in South Australia I was often approached to explain how certain epiphytic orchids grow in nature. While not being an expert by any means I have made a close study of our New South Wales epiphytes for over 30 years and as there are too many to explain in detail during my brief stay in South Australia, however if I can be of any assistance to members and if they care to write to the above address I will endeavour to answer any questions that are asked if I possibly can. This can be done by personal letter or through the pages of your bulletin if you so desire.

Yours faithfully, Len Field,

47 Cox's Avenue,
CORRIMAL. N.S.W. 2518

Dear Mr Hargreaves

In recent years many groups and individuals have become involved in the hybridisation of Australasian orchids and the breeding of Australasian species, especially from superior clones. ANOS Council has become convinced that there is a need to help people and groups involved in this area get in touch with each other. Because of my involvement with the Wollongong and District Native Orchid Society's breeding programme, ANOS Council has appointed me to try to help put interested people in contact with each other.

At present the Wollongong group is heavily involved in several breeding projects. We are at present breeding rare Australian species as well as selected New Guinea species in our members' collections. We are also breeding cool-growing Australian and New Guinea hybrids as well as *Ceratobium* hybrids. These plants are then sold to our members at a low cost enabling them to improve their collections and also help preserve rare and endangered species. Plants surplus to our needs are sold to other interested people fairly cheaply. Money gained from plant sales is used to meet the cost of our breeding programme. We have also begun a tuber bank for our members interested in growing terrestrial orchids.

I am writing to all groups associated with ANOS and if any of your members are involved in similar programmes or would like to begin similar programmes and are interested in exchanging pollen or divisions could you write to me with details of their programme, clones they have and their needs. I will put them in contact with others who may be able to help.

Yours sincerely, Rob Trevenar.

RECENT CHANGES IN NOMENCLATURE

Mark Clements in the *Orchadian* 8:64-68 (1985) gives the following corrections to names following his recent research on the type collections of Australian orchids held at Kew and British Museum.

The name *Caladenia carnea* has been reinstated! This will be good news, as most of us were not happy to use the name *C. catenata* for South Australian plants and I for one still have *C. carnea* on the labels for my pots of "pink fingers". Unfortunately (we can't expect all good news) the name *C. catenata* (Smith) Druse must now be applied to what was previously known *Caladenia alba*!

Of less concern to us is the note that the name *Caladenia gemmata* forma *lutea* for the Western Australian yellow form of *C. gemmata* is illegitimate. I would like to see it made legitimate (it needs only for a type to be cited) as the name is quite appropriate.

Caladenia denticulata has also be reinstated (in place of *C. filamentosa* var *denticulata*). This is quite acceptable but it is yet to be determined if *C. denticulata* actually occurs in South Australia. A similar situation exists with the suggested reinstatement of *C. longicauda* in place of *C. patersonii* I still think the latter name is more realistic.

The eastern and underground orchid *Cryptanthemis slateri* is now known as *Rhizanthella slateri*, i.e. both underground orchids in Australia belong to the genus *Rhizanthella*!

NEW HYBRIDS REGISTERED RECENTLY

<i>Dendrobium</i> Twinkle	= Penny Anne x <i>falcorostrum</i> (by W. Upton).
D. Red Baron	= Blushing Rose x <i>kingianum</i> (by W. Upton).
D. Pixie	= Ellen x <i>suffusum</i> (by W. Upton).
D. Goblin	= Emmy x Ellen (by W. Upton).
D. Fairy Floss	= Penny Anne x <i>tetragonum</i> (by W. Upton).
D. Fiesta	= Colin x Kim (by W. Upton).
D. Dainty Cascades	= <i>pugioniforme</i> x <i>tenuissimum</i> (by W. Upton).
D. Elfin	= Dainty Cascades x <i>kingianum</i> (by W. Upton).
D. Pink Pencil	= <i>kingianum</i> x <i>teretifolium</i> (by W. Upton).
D. Warringah	= <i>bigibbum</i> x <i>speciosum</i> (by W. Upton).
D. Wesley Rose	= Pink Pencil x <i>speciosum</i> (by W. Upton).
D. Rutherford Surprise	= Hastings x <i>kingianum</i> (by T.J. Smith).
D. Cherub	= Peter Petersen x <i>carronii</i> (by D'Bush Nursery).
D. Minnie	= <i>carronii</i> x <i>johannis</i> (by D'Bush Nursery).
D. Nerang	= Wyuna x <i>speciosum</i> (by C.J. Brandon).
D. Reg Burns	= <i>dicuphum</i> x <i>fleckeri</i> (by M.R. Zeller).
D. Ronald Banks	= Double Two x <i>speciosum</i> (by D. Banks).
D. Telekon	= Hilda Poxon x <i>kingianum</i> , (by D. Banks).
D. Ultravox	= Bardo Rose x Andrew Persoon (by D. Banks).
D. Vida Banks	= Hilda Poxon x Wonga (by D. Banks).
D. Warrior	= Hilda Poxon x Ku-Ring-Gai (by D. Banks).

The following by R. Nash of South Australia;

<i>Pterostylis</i> Elegance	= <i>P. x ingens</i> x <i>robusta</i> .
P. Joseph Arthur	= <i>P. x ingens</i> x <i>curta</i> .
P. Mary Eleanor	= <i>P. x ingens</i> x <i>cucullata</i> .
P. Nodding Grace	= <i>P. curta</i> x <i>nutans</i> .

RECENT ADDITIONS TO THE AUSTRALIAN ORCHIDACEAE

The following is an incomplete list of orchids named during the past twelve months:

Caladenia amplexans A.S. George from the inland of south west Western Australia is a common species previously confused with *C. caerulea* (which also occurs in Western Australia). Both these species are illustrated in Hoffmann and Brown's superb book "Orchids of South West Australia". *C. amplexans* is being cultivated in Adelaide.

C. infundibularis A.S. George is mainly restricted to the Margaret River-Augusta area of Western Australia. It is related to *C. huegelii*. An illustration is found in "Orchids of the South West" page 115. It is in cultivation in Adelaide. Its pollination was discussed by Stoutamire (1983).

C. uliginosa A.S. George is common along the Muir Highway in Western Australia. It is similar to some of our local *C. patersonii* (see "Orchids of the South West", page 125). Cultivated in Adelaide.

C. wanosa A.S. George from Kalbarri National Park, Western Australia, was named from the initials of the "Western Australian Native Orchid Society", our sister group in Perth. See "Orchids of the South West", page 93, for an illustration. Cultivated in Adelaide.

Drakea thynniphila A.S. George has a name which refers to its pollination strategy (it sexually attracts male thynnid wasps like all Drakeas!). See "Orchids of the South West", page 223. Cultivated in Adelaide.

Pterostylis dilatata A.S. George is similar to *P. nana* but has cauline leaves in place of a basal rosette. It is widespread in drier parts of south west Western Australia. See page 223 of Hoffmann and Brown's book.

Thelymitra variegata var *apiculata* A.S. George is a rare northern form of the beautiful "Queen of Sheba" sun orchid. See "Orchids of the South West", page 40-41.

*The above species were named in Nuytsia 5:53-62 in October, 1984.

Microtis globula R. Bates is a tiny green-flowered species flowering only after fires in the Walpole-Albany area of Western Australia. Cultivated in Adelaide. (Named in J. Ad. Bot. Gdns. 7:60 (1984).)

Caladenia dilatata var *stricta* R. Bates (see Journal Native Orchid Society South Australia June 1984). Cultivated in Adelaide.

Bulbophyllum boonjee B. Gray and D.L. Jones from the Boonjee area of the Atherton tablelands is closely related to *B. lageniforme*.

Taeniophyllum confertum B. Gray and D.L. Jones from near the Endeavour River in north Queensland. Both these epiphytes were described and illustrated for the first time in the Orchadian 8:40-43 (1984).

We can probably expect an average of ten new species or variations per year for the next ten years, i.e. one hundred new taxa by 1995!

CULTURAL AWARDS Les Nesbitt -- Registrar

The NOSSA Bylaws provide for Cultural Certificates but only two have been awarded in the past three years. Awards are given for excellence of culture and can only be granted once to any exhibit. The Bylaws set out in detail the procedures for judges and exhibitors. A few notes on the procedure may help you to win one of these sought after awards which recognise grower skill as well as floriferous clones.

At present the Society has a Registrar but no panel of judges. The Committee judge all exhibits. At least five Committee members must judge an exhibit for a cultural award and 75% must be in favour of the award. There are two ways in which an exhibit can be considered for a cultural award:

(1) The Registrar can nominate (with the grower's consent) an exhibit on display at a meeting or show if he deems it worthy of an award.

(2) The grower can nominate his/her plant for an award by notifying the Registrar 24 hours before a meeting or show. There are no entry fees.

The grower must submit a statutory declaration that they have grown the exhibit for at least two years and must agree to provide to the Society three appropriate slides of any awarded exhibit plus a written account of the method of culture for the Journal. If the orchid is a hybrid the names of the parents must be supplied, preferably on a label attached to the exhibit. The grower shall remove all identifying marks from the exhibit before delivering it to the Registrar. The Registrar is responsible for the conduct of the judging and the records of any awards granted.

What is "an exhibit" you ask, and how good must it be to be considered for an award? The Bylaws state:

"Terrestrials

If a colony-type then the plants should be numerous yet not overcrowded and should show evidence of outstanding growth for the species. If a non-colony species, container should contain several plants and it is an advantage if seedlings are in evidence. Difficulty of cultivation or bringing into flower will be taken into account.

Epiphytes

Exhibits should be specimen plants showing exceptional floriferousness. The flowers should be evenly distributed over the plant, and the majority of the flowers should be open. Backcutting of rhizomes will not be penalised unless it detracts from the appearance of the exhibit."

For terrestrials, an exhibit is any number of plants in the one container. Hybrids are judged as for species. For epiphytes, an exhibit is a plant in a container or any other medium of display.

The plant or plants to be judged shall be in show condition, free from diseases or pests. All flowers and buds of the plant(s) shall be free from malformation, blemish, injury or disease. Flowers must be attractively presented on firm strong stems.

The judges use some discretion and if an epiphyte has 500 flowers they will overlook one or two that are damaged. Because terrestrials are renewed annually they are tougher on the appearance of these plants.

I hope we can make several awards before the end of 1985. We have the growers with the skills. All it needs is perseverance and a lot of luck.

Well I have at last succeeded in flushing out someone's special interest in orchids. Thank you Len for your comments and list of references to my bit of Madness in the December issue, which appeared in the March issue. I must also apologise to you Len for being so careless for I am aware that indigenous peoples made many uses of the orchids, but am only aware that our Aborigines used these plants for food and one report I read of them using one of the eastern epiphytes seed capsules as a contraceptive.

As this subject needs a more general exposure, how about an article on the subject from you Len. You never know how many people may follow up such an interest.

Now the challenges have gone out, let's get on with the plants. This time I would like to discuss *Spiranthes sinensis*. In the early works on our orchids this plant was called *Spiranthes australis*. This name was later dropped for *Spiranthes sinensis* but lately the *australis* has come back and now the plant is known as *Spiranthes sinensis* var. *australis*.

About fifteen or so years ago I thought that our Mount Lofty Ranges form of this plant was different to those found along the eastern coast of Australia. However, on growing both in the same culture I found this not to be true and now all plants of this species found growing about my garden are derived from a mixture of plants from these areas.

For some reason I always look forward to the flowering of this species in the mid-summer, maybe it reminds me of the coming season of new hopes and flowers. In a mass, the flowers make an excellent show but a single spike must be examined closely to be fully appreciated. The white to pale pink flowers always remind me of the glass lamp shades that used to be fitted in the older railway carriages on the metropolitan service about Adelaide until about 1960 when these carriages started to disappear. As a subject for the camera these flowers make quite a challenge, especially in close up.

About South Australia this plant is found in swamp land or along the damp margins of same. In the eastern states, New South Wales especially, it is to be found growing not only in these situations but out in the bush. Often this plant survives in semi-cleared land which is lightly grazed, in parts of the tablelands of New South Wales. A friend of mine, who lives on Mount Tomah in the Blue Mountains of New South Wales, had many of these plants growing along his driveway, but as the trees along the driveway have grown our little orchid under discussion has decreased in numbers.

At another place, between Canberra and Bateman's Bay, I have seen this plant growing "like a lawn" along the edge of the roadside. That really is a bit exaggerated, but they were thick in the grass all the same.

About the Mount Compass area this plant had at one time used to be quite common, especially in the Square Water Hole swamps. Besides the pink-flowered form, pure white flowered forms had used to be found. This later colour form appeared to be self-pollinating. Once I collected one of the white forms and grew it for many years and over the seasons it slowly changed to pale pink in colour, losing the self-pollinating ability.

Once one has an established plant of this species growing and flowering it is not too long before seedlings will appear in any permanently damp place about the plant, providing the flowers get fertilised.

In cultivation I find that *Spiranthes sinensis* will grow in a wide variety of soils and mixtures providing these mediums are kept damp throughout the year. For the majority of my plants I stand them in water but there are

Methods and Madness of an Orchidologist (contd.)

many plants that thrive equally as well in pots of *Epidendrums*, *Dendrobium* species, fern pots, cactii and succulent pots and amongst the American Pitcher plants I have.

For best results I find the mixture should be open, well drained and moist. Some years this species prefers plenty of summer sun, while at other times it does best with some early morning sun followed by a near noon sunning. During winter the plants like plenty of direct sun.

For those plants grown in their own containers (especially if stood for long periods in water) repotted every two years with fresh material is an advised practice to follow, which should be done in the autumn. The plants growing with the *Epidendrums* and *Dendrobiums*, need not be repotted for many years, well until either they or their hosts need this treatment because of overcrowding. As mentioned above the potting medium should be open and well drained. This is achieved by using very coarse sand and fine gravel (preferably water washed and worn), a little scoria, chopped Sphagnum moss, peat and aged wood chips. This combination of materials must be damp and well mixed.

(to be continued.)

© R.C. Nash, April 1985.

PHOTOGRAPHIC COMPETITION

Last month we announced the Photographic Competition. This is to be run in conjunction with the Annual Spring Show and a selection of photographs, together with the winning entries will be displayed at that show. All entries should be sent to the Secretary to reach him by 27 August, 1985.

The photographs or slides will remain the property of the Society and will be judged solely on photographic merit. The judges decision shall be final and no correspondence will be entered into.

Dig back into your old pic's and send in a few entries. YOU may be on a winner:

NATIVE ORCHIDS:

WHAT SPECIES ARE BEING GROWN IN ADELAIDE?

Recent estimates of the percentage of Australian orchids in cultivation range from a low 25% to an equally unbelievable 80%. It would be very useful to find out just what is being grown.

We invite all "grower" members to send or give to the editor a list of the species they are cultivating.

The results will be tabled in the July issue of our Journal. All individual lists will of course be treated confidentially.